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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/863,748	05/23/2001	Haoqiang Huang	25436/1642	9159

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EXAMINER

BAKER, MAURIE GARCIA

ART UNIT	PAPER NUMBER
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1639

DATE MAILED: 06/04/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/863,748

Applicant(s)  
Huang et al

Examiner  
Maurie G. Baker, Ph.D.

Art Unit  
1639



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE THREE MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Mar 18, 2003
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above, claim(s) 4, 6, 8, 9, and 14-46 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 7, and 10-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 6 6) ☐ Other:

### **DETAILED ACTION**

**Please note:** The number of Art Unit 1627 has been changed to 1639. Please direct all correspondence for this case to **Art Unit 1639**.

1. The Response filed March 18, 2003 (Paper No. 8) is acknowledged. No claims were cancelled, amended or added. Therefore, claims 1-46 are pending.

#### ***Election/Restriction***

2. Applicant's election with traverse of Group I (claims 1-14) is acknowledged. The election of species is also noted. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

3. Claims 15-46 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to non-elected inventions. Also, claims 4, 6, 8, 9, and 14 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to non-elected species, there being no allowable generic claim.

4. Therefore, claims 1-3, 5, 7 and 10-13 are under examination.

#### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-3, 5, 7 and 10-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. Claim 1 (and all claims dependent thereon) is indefinite for the following reasons. First, the claim recites “an *activated* dendrimer polyamine” (emphasis added). The term “activated” is a relative term which renders the claim indefinite. The term is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is simply unclear what structure is covered by the terminology “*activated* dendrimer polyamine”. Second, it is unclear if the claimed product comprises only the solid surface with the covalently bonded “activated dendrimer polyamine” or if the claimed product comprises the solid surface, the “activated dendrimer polyamine” and the “substance comprising a hydroxyl group or amine group”. This is due to the terminology of “chemically reactive surface *reactive with ...*” (emphasis added). It appears that these recitations are merely intended use recitations, which are not afforded any patentable weight. See MPEP 2111.02. This confusion is especially apparent in instant claims 10 & 11.

- B. Claim 5 is indefinite because it is unclear how the silane containing moiety is to covalently bond the dendrimer polyamine (i.e. the linkage sites to the dendrimer and the surface are not shown). Thus the claim is incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. Thus, one of ordinary skill would not know the metes and bounds of the claimed invention.
- C. Claim 7 is indefinite because it is unclear how there can be  $[15]^n$  terminal primary amine groups since the structure of the dendrimer polyamine in question is not set forth in the claim.
- D. Claim 10 lacks a conjunction between the members of the Markush group, which renders the claim confusing. As applicant has recited "selected from the group consisting of...", an -and- should be inserted.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or  
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

8. Claims 1-3, 5, 7 and 10-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim et al (US 2002/0006626 A1).

The instant claims suffer from confusion as to the specific product claimed (see paragraph 6 above). Thus the product of Kim is deemed to read on the claims as it is unclear what applicant's claims encompass.

Kim et al disclose a monolayer of functionalized dendrimers on a solid surface that are reacted with biomolecules (see Abstract). The dendrimers are polyamines with primary amine terminal groups (see Figure 1). Specifically a glass surface is treated with a silane and then reacted with a dendrimer which is further reacted with the biomolecule (see e.g. claim 9 of Kim et al). Dendrimers of different generation (different size, i.e. number of end groups) are disclosed, see page 2, 1<sup>st</sup> column. As the compositions of Kim et al read directly on the claims, the stability properties recited in instant claims 12 and 13 would be inherent.

9. Claims 1, 5, 7 and 10-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Manzer et al (US 6,288,253 B1).

The instant claims suffer from confusion as to the specific product claimed (see paragraph 6 above). Thus the product of Manzer is deemed to read on the claims as it is unclear what applicant's claims encompass.


Manzer et al disclose dendrimers attached to a silica surface (see columns 11-14). The dendrimers are polyamines with primary amine terminal groups.

Specifically a silica gel surface is treated with a silane and then a dendrimer is built up on this surface. Dendrimers of different generation (different size, i.e. number of end groups) are disclosed in columns 12-14. As the compositions of Manzer et al read directly on the claims, the stability properties recited in instant claims 12 and 13 would be inherent.

*Status of Claims/Conclusion*

10. No claims are allowed.
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maurie Garcia Baker, Ph.D. whose telephone number is (703) 308-0065. The examiner is on an increased flextime schedule but can normally be reached on Monday-Thursday and alternate Fridays from 9:30 to 7:00.
12. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew J. Wang, can be reached on (703) 306- 3217. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4242. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

Maurie Garcia Baker, Ph.D.  
June 2, 2003



MAURIE GARCIA BAKER PH.D.  
PRIMARY EXAMINER

MAURIE GARCIA BAKER PH.D.  
PRIMARY EXAMINER